Is Managed Care Reducing Physicians' Provision of Charity Care?

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Introduction

It is generally agreed that managed care has required that providers to pay greater attention to costs in delivering care. Few argue the benefit of infusing cost-consciousness into medical decision-making. But increasingly, policy makers and researchers have focused concerns on secondary, unintended implications of increasing competition and cutting costs: if high margins fostered charitable missions, then efficiency may reduce capacity to subsidize safety-net providers and care.

In 1999, according to the RWJ Community tracking data, more than 15% of Americans, or about 41 million people reported not getting or delaying care. Among these, 62% reported concerns over costs were reason they failed to receive care. Private, office based physicians are an important source of care for the uninsured and underinsured. Data vary on how much "charity care" physicians provide, or even what constitutes charity care. However, surveys consistently report that around 60-75% of patient-care physicians provide some care for which they expect no compensation, spending between 2-4 hours a week delivering free care and perhaps another 4-5 hours a week delivering care at reduced rates[1]. This is non-trivial in the course of the (average) 45-hour work-week that a physician provides in direct patient care.

The trends are also subject to disagreement. Reports based on the RWJ CTS data claim that physicians' propensity to offer charity care fell 4 percentage points between 1996/1997 and 1998/1999, and attribute the change to growing managed care (Cunningham, et al 1999; Reed, Cunningham and Stoddard, 2001). The AMA, using data from their Socioeconomic Monitoring

[1] Based on data reported from the 1999 AMA socioeconomic monitoring system survey, 65% of physicians provided charity care and among those that did, they provided an average of 4.4 hours/week of free care and 4.7 hours of reduced-fee care. The RWJ data characterizes charity care as simply "uncompensated care" and reported that 77% of respondents provided an average of 10 hours/month of care. Cunningham (1999) erroneously reports that the RWJ data suggest physicians spend 10 hours/*week.*

System Survey, report that the proportion of physicians providing care in 1999 was higher than a decade earlier, although lower than in the mid 1990s, casting doubt on the trend and the role of managed care growth in driving observed changes. (Kane 2002).

We use the 1996-97 CTS data to re-examine the economic factors associated with physician's decisions to offer charity care. We draw on an economic framework, in which we posit that the provision of charity care should be affected by the opportunity cost of physician time, the cost of other practice resources, and the demand for uncompensated care. Managed care has had a more complex effect on the value of physician time and physicians' ability to allocate their time than earlier papers have recognized. In particular, managed care has increased demand for primary care, while dampening demand for specialty care; and the impact has varied across markets. (Simon, Dranove and White, 1998). Changing wage rates have both income and substitution effects. Associated changes in physician earnings and practice profitability may affect the utility of having a mission and a physicians' ability to finance one.

At the same time, changes in organizational form and practice governance have altered physicians' ability to control practice resources that are complementary to their own time. Employee- physicians are less likely to be able to alter practice hours, or to have control over the use of the clinical facilities than are practice owners. As the number of physicians who are owners of their practices declines, so might ability to provide charity care. Finally, from a methodological perspective, if managed care is generating market-level changes in physician practice styles it is important to recognize that the development of managed care may be endogenous to local market conditions. Otherwise it may be difficult to separate market factors that give rise to the demand for charity care from those that have encouraged or impeded the growth of managed care in the community. This suggests a reexamination of the data may shed light on the factors driving physicians' decision to provide charity care and recent trends.

Prior Research and Framework

Much of the current focus on declining charity care has been sparked by a series of papers produced from the RWJ Community tracking physician surveys. Cunningham, et al (1999) investigated the relationship between managed care and charity care using the 1996-97 (CTS) physician survey. They found that physicians with the highest involvement with managed care, >=85% of their practice revenues, were significantly less likely to provide any charity, and if they did, they provided fewer hours of charity compared with physicians with 11 to 20 % of their practice revenues from managed care. In addition, physicians who practiced in areas with high managed care penetration (derived from the CTS data) provided fewer hours of charity care than physicians in other areas, regardless of their own level of involvement with managed care. The authors reasoned that cost-control methods used by managed care make it harder for providers to shift the cost of uncompensated care to other payers, thus limiting their ability to provide charity care. Specialists provided more charity care than PCPs, owners were more likely to provide care than employees. However, the analyses failed to consider that the impact of managed care might vary significantly across practice types and specialties.

Reed, Cunningham and Stoddard, in a 2001 CTS Health Care Policy report, updated the earlier descriptive findings using the 1998-1999 wave of the CTS physician survey. Notably they found that that fewer physicians provided charity care in the more recent survey: falling from 76% to 72%, and the decline was more pronounced among employee-physicians. Again, managed care was singled out as the driving force, with the assertion that that the administrative burdens required by managed care and multiple-payers leave physicians with less time to devote to charity.

Culler and Ohsfeldt's work (1986) provides a framework for examining physicians' decisions to provide charity care. Drawing from Becker's (1965) theories on the allocation of time between wage and non-wage activities, Culler and Ohsfeldt found that a physician is less likely to provide charity care as the opportunity costs of his/her time increases, as measured by their net wage rate. The authors did not look specifically at the effect of managed care, but their

results suggest that managed care may affect the opportunity cost of the health care providers' time at the margin, thereby affecting the self-provision of charity care. Emmons and Rizzo (1993), counter Culler and Ohsefelts' findings by noting that charity care may be a normal good. They provide theoretical and empirical evidence that income effects can exceed substitution effects so that rising physicians' wages lead to an increase in charity hours, analogous to a back-bending labor supply curve under sufficiently high wage conditions.

Consider the impact of managed care. If we model physicians as optimally allocating time to value charity care (and other non-wage activities), then the impact of managed care penetration and the impact of the extent of contracting with MCOs is ambiguous for several reasons. First, managed care has had differential impact on the demand for primary care and specialty services. Demand for PCPs and primary care has increased, increasing primary care incomes, and generally wages (Simon and Born, 1996; Simon Dranove and White, 1998). Specialist earnings have declined in hospital-based fields and stagnated in the cognitive specialties. We expect that managed care would affect wages at the market -level; hence we should see managed care penetration differentially affecting charity care hours of PCPs and specialists as the opportunity cost of time is alternatively increased or decreased in the marketplace.

Selective contracting operates by concentrating managed care patients and services among a panel of providers. Providers typically accept discounted fees in exchange for increased patient loads. Moving the practice closer to its capacity necessarily raises the marginal cost of services, potentially crowding out free or reduced fee care. Again, empirical evidence suggests that the impact may differ for PCPs and specialists. PCPs report a modest increase in hours worked and in patient-visits (AMA SMS 1997, 1999). The evidence on changes in specialist workload under managed care is more mixed. As plans ration access to specialists it may be that managed care involvement increases the intensity of visits without increasing volume.

Data Sources

The primary data for this study come from the Community Tracking Study (CTS) physician survey conducted in 1996 and 1997.The CTS is a national biennial survey funded by the Robert Wood Johnson Foundation to study the rapidly changing health markets and the effects of these changes on health care consumers and providers. Separate surveys were conducted to explore three main constituents of health care change: households, physicians and employers. The data were drawn from 60 selected sites, stratified by region, community size and type (metropolitan-non metropolitan).

The physician sample for each of the 60 sites was drawn from the American Medical Association (AMA) and the American Osteopathic Association Masterfiles. A telephone survey was conducted with 12,600 non-federal, office and hospital-based physicians who spent at least 20 hours a week in direct patient care, with an overall response rate of 65%. Primary care physicians were over sampled. Radiologists, anesthesiologists, pathologists were excluded as were residents and fellows.

Our analysis is based on the primary (i.e. not augmented) sites sample of the physician survey (n=11,474). Our focus is on office based physicians. We exclude physicians who are employees of staff-model HMO because it is not clear how many of the practice-level managed care contracting variables are measured for this group. Staff-model HMO physicians are only 6% of all patient care physicians, and their numbers have been declining over recent years, so we do not believe that this exclusion is limiting.

We also exclude physicians who designate their primary specialty as psychiatry, obstetrics or gynecology for empirical reasons. Psychiatrists provide more charity care than any other specialty in our sample, and in all others' analyses as well, probably due to lower levels of private coverage for mental health services. Preliminary analyses suggested that pooling psychiatrists with other specialists produced a poor fit of the empirical model. Hence, we drop psychiatrists and will examine their charity care hours separately in later versions of the paper. Similarly Ob/Gyns were omitted for empirical reasons. We find that the distinction between primary care and specialty care

works well for medical specialists, surgical specialists, FP/GPs. pediatricians and general internists. OB/Gyns provide more primary care than other specialists, but markedly less than PCPs. Again, we drop them initially from the sample. Together, Psychiatrists and Ob/Gyns make up less than 8 percent of the sample.

Finally physicians were dropped if they reported values for practice activities or compensation variables that were extreme outliers. We drop (1) physicians that report working fewer than 40 hours per month, net of charity care; (2) physicians with an hourly wage more than 4 standard deviations from the sample mean; and (3) physicians with incomes that were top-coded. The final sample of physicians for this study was 9592. All results were weighted to be representative of physicians in the 60 sites. The weights used were developed by CTS and adjust for non-response and over-sampling of primary care physicians.

We use four data sets to measure market-level (PMSA) factors. We create market level averages from the 1996-97 CTS household survey to create measures of access, satisfaction, health status, use of services and insurance coverage. The CTS Household surveys approximately 32000 families and 59,000 individuals in the 60 communities. The 1998 Area Resource File (ARF) was used to provide additional measures of PMSA sociodemographics and the supply of health care workers and facilities. We aggregate physician responses to the AMA Socioeconomic Monitoring System (SMS) surveys 1994-1995 to estimate managed care penetration per PMSA. We alternatively use measures of household enrollment in managed care plans from the 1995 INFORUM/ PULSE survey of 100 large metropolitan areas. After merging data, the final sample size is between 8461 and 9528 observations, depending upon the sets of regressors used.

Empirical model

We posit that physician provision of charity care is a function of the opportunity cost of time, the cost of using practice resources that are complementary to the production of charity care; factors affecting the local demand for charity care, and other factors affecting supply – including

physician preferences. We speculate that managed care affects the economic framework in 3 ways: first it can affect the opportunity cost of uncompensated care thru market- level changes in physician wages and the demand for care. These effects will vary across specialties. Second, at the practice-level, selective contracting may affect (short-run) individual practice private patient loads, reducing excess practice capacity and effectively increasing the marginal cost of additional visits. Finally, managed care may put in place rules and guidelines that reduce discretionary actions and increase accountability for use of practice resources – limiting ability to provide uncompensated care. We expect that practice revenue derived from managed care is a marker for the preponderance of such guidelines and practice rules.

Table 1 presents descriptive information on the variables used in the analyses. We motivate our empirical model and describe the construction of key variables, below.

Dependent variable

The hours of charity care provided in the last month was used as the dependant variable in our analyses. The CTS words the question as follows:

> "During the last month, how many hours, if any, did you spend providing charity care? By this we mean, that because of the financial need of the patient you charged either no fee or a reduced fee. Please do not include time spent providing services for which you expected, but did not receive payment (i.e., bad debt)".

We take the log of charity care hours to correct for non-normality. Zero hours are recoded to 0.01 prior to taking logs.

Independent variables

Practice managed care involvement: The extent of managed care involvement was measured in the CTS as the percent of practice revenues derived from all managed care. We expect that selective contracting increases physicians' private patient loads, particularly for PCPs, raising at least the short-run the cost of charity care in the practice. Increased reliance on managed care may

also be accompanied by more practice guidelines, administrative rules and benchmarking systems that inhibit discretionary practice activities. We expect that practice revenue derived from managed care is a marker for the preponderance of such guidelines and practice rules. Cunningham et al. (1999) found that physicians who are more heavily involved with managed care plans provide less charity care. We use a continuous measure of managed care involvement, in contrast to categorical specifications used in earlier studies.

Gender (Dummy variable, Male=1): There is a sizable literature that finds differences in practice patterns between male and female physicians. Women tend to spend more time with patients, but also tend to more often work as employees in larger practice setting. Some suggest women adopt a more caring practice style that might be more accommodating to uncompensated care. Prior research on the role of gender is mixed. In Cunningham et al. (1999), male physicians provided significantly more charity care than female physicians. In Emmons and Rizzo (1987), females were more likely to provide uncompensated medical care, and were more likely to devote more time to charity than male physicians. We suspect that control for practice structure and specialty will mitigate the importance of gender.

International medical graduate (Dummy, IMG=1): IMGs have significantly different practice settings than USMGs that may affect the supply or demand for charity care. Controlling for practice location and setting there may be cultural differences that affect propensity for charity care. Again prior studies find mixed results.

Board Certified (Dummy, certified=1): Board certification has been found to be significantly associated with a higher likelihood of providing charity, but not necessarily the amount of care provided. (Cunningham, 1999). We suspect that board certification captures unmeasured differences in practice setting and wages.

Owner (Dummy, Sole or part owner =1): We expect that owners have greater autonomy in their practice decisions compared to employed physicians, and also greater ability to command use of non-physicians resources in the production of care. It is expected that owners provide more charity care. This is consistent with prior research and data.

Size of Group Practice (number of physicians) larger practices are typically characterized by greater division of labor and administrative rules. We expect this will damped the supply of charity care. Cummingham and the CTS researchers find a large effect of practice size, however this might be driven by HMO physicians (821 physicians) whose practice sizes are outliers in the data.

Specialist (Dummy, medical and surgical specialists = 1): There are competing theoretical rationales for why specialty might matter in a physicians' decision to provide charity care. Most revolve around lack of control for supply or demand factors.

Culler and Ohsfeldt (1986) found that psychiatrists provided significantly more charity care than other specialties hypothesizing that this was due to lower coverage for mental health and a higher proportion of patients who have difficulty paying for services. Emmons and Rizzo (1993) found that most specialists provide more charity than do generalists, not simply psychiatrists. They hypothesized that general /family practitioners may be subject to greater competitive pressures and as a result, are less able to provide charity services. They also stated that specialists may provide more charity care because their services are more expensive, on average, although this might also tend to make the opportunity cost of care greater. Cunningham et al. (1999) hypothesize that as specialists have greater margin due to their higher earnings and higher return on their medical education, they would be more willing to provide charity care.

Finally, charity care may be alternatively viewed as an "investment" in an ongoing patient relationship when a patient is temporarily uninsured. One might expect that primary care physicians would have a greater incentive to provide care during interruptions in insurance since there tends to be a longer-term relationship in primary care than specialty care.

Years in practice: Prior research finds that mid-career physicians offer more charity care. Older and younger physicians, while having lower effective billing rates, may have a greater opportunity cost of time; wither in leisure or in terms of investing in paying patients.

Hourly wage: (**computed net of charity care hours**) Hourly wage is a measure of the opportunity cost of uncompensated care. In Cunningham et al. (1999) both the likelihood and the amount of charity care provision decreased as the hourly wage increased. Similarly, in Culler and Ohsfeldt (1986), physicians provide fewer charity hours as their hourly wage increased. Emmons and Rizzo (1993) . Hourly wage is constructed as the ratio of patient care income divided by paid patient care hours. (We subtract charity care hours from total patient care hours). Income is taken as the midpoint of the range of income values.(see discussion of income below)
Income (net practice earnings, in $1000) we expect that a margin permits a mission. The CTS only reports income as $50,000 intervals. We take the midpoint of the intervals in computing income. We expect that this variable is measured imprecisely. As a result, we expect that factors affecting income and market wages (e.g. managed care penetration, training,, etc) will capture unmeasured income and wage effects in our regressions.

Practice does not accept new Medicaid patients (dummy, no Medicaid = 1): We anticipate that practices that do not accept Medicaid have a higher opportunity cost of time, perhaps more paying patients, or an objective function that places less weight on public missions.

Market Level Variables

Demand Side

Uninsured (percent of non-elderly lacking health insurance, 1996: We expect that physicians practicing in sites where the % of uninsured is higher would provide more charity care

Average infant mortality rate: We expect the IMR is a marker for a population with poorer health status and lower access to care, raising the demand for charity care.

Supply Side

Physicians per 1000population, nurses per 1000 population: We would expect more charity care to be provided in sites with high supply of medical doctors, nurses or beds as supply of local health care resources expands.

Empirical Results

Figures 1 -4 and Table 2 present some basic descriptive statistics that motivate the empirical results. Charity care hours are skewed, with approximately 3 of 4 physicians providing some care in the prior month, but most physicians reporting that they provided fewer than five hours of care.

Primary care physicians provide the least amount of charity care while surgical specialists provide the most, and these differences are statistically significant in simple univariate analyses.

Male, Board certified physicians and IMGs provide significantly more care than their counterparts. Owners provide slightly more care than employees, but the difference is not statistically or economically significant in simple analyses. Most notable is a sharp rise in

charity care hours at the upper ends of the income distribution, possibly picking up specialty-specific effects as well.

Multivariate analyses:

Table 3 presents the results of multivariate analyses. In light of the skewed distribution of charity hours, we transformed the dependent variable to logs. (Zero recoded to 0.01). All regressions are weighted for complex survey design of the CTS. Models 1-3 present the results, first controlling for basic physician and practice characteristics, next adding in aspects of managed care and finally adding measures of the opportunity cost of physician time and estimates of practice capacity for paying patients, along with market-level supply and demand shifters. Model 4 endogenizes managed care penetration and physician supply, using specifications in Dranove, Simon and White (1998). Managed care is significantly endogenous, and is predicted by prior (1980) period hospital market structure (competition), the presence of large employers and local population growth[2]. Our model for endogenous physician supply is borderline significant (p value of 0.06), using prior period resident supply as an instrument for latter physicians supply.

We examined alternative specifications as well. Given the large number of "no charity care" responses a Tobit is potentially a preferred specification; however the Tobit, with endogenous managed care penetration, is not amenable to the complex probability weights of the CTS. We also categorized hours of charity care and specified the model as an ordered Probit. We encountered similar problems with the sampling weights, and found that there was no clear and sharp division of the hour's distribution into distinct

[2] We use a subset of the identifiers described in Dranove, et al: population growth, prior period hospital herfindahl, and the percentage of the labor force employed by large (over 500) employers.

strata. We rejected the 2 part estimates used by Cunningham and others since we found that they did not particularly fit the data well. Two part models are not recommended when the distribution is skewed heavily towards one tail.

As models 1-3, indicate results related to the impact of managed care are reasonably stable across alternative specifications. Specialty, which is significant in minimal models, no longer predicts charity care when more complete descriptions of the practice environment are added. Model 4 is the preferred specification and we will largely limit discussion to these results.

Managed care has a chilling effect on the provisions of charity care at the market and in the practice. Market level managed care penetration significantly reduces the charity care hours, regardless of physicians' participation in managed care in their practices. This is consistent with managed care raising local primary care wages. The effect for specialists, at the market-level however is opposite as captured in the specialist interaction term. Again this is consistent with falling demand for specialty services, and presumably market-level declines in wages and the opportunity cost of time. The net effect of the managed care penetration variables is not significantly different from zero in the WLS specifications; however in Model 4 empirical estimates suggest a net increase in charity care hours in highly concentrated managed care markets. The impact on charity hours is modest, evaluating other variables at the mean, moving from a low to a high managed care market decreases hours for PCPs by just under 20%, and increases them for specialists by 9%.

Practice-level involvement in managed care reinforces market-level variables for primary care physicians – higher practice reliance on managed care reduces hours of

charity care: moving from a practice with "low" managed care to one with high reliance on managed care contracts reduces charity care hours by 17% (i.e. moving from -1 std. dev to +1 std deviation in the distribution of managed care contracts) The effect for specialists is similar though smaller in magnitude, as the interaction term on specialists is positive, but small. In general this is consistent with hypotheses that managed care plans place administrative constrains on practice style that reduce charity care and selective contracting tends to increase private patient work-loads.

The wage-rate variables are negative and highly significant over-all suggesting a rising earnings on paying patients discourages charity care. The impact for specialists is unclear: again our specialist interaction term suggests an opposite effect among specialists and in Model 4 the estimated impact is sufficient to net a positive relationship between wage rates and charity care. Income effects are strictly positive and suggest that higher earnings enforce a charitable mission. We are not confident that we have separated wage effects from total income effects and this may be what is captured in the specialist wages.

Physicians who are owners of their practices and those in smaller practice settings provide significantly more charity care than physicians who are employees or in larger practice settings. This is as predicted and the result holds even after dropping HMO physicians from the sample. Assuming other aspects of the practice are constant, a sole-owner provides nearly 80% more charity care than a comparable employee physician in a group practice.

Finally variables included to proxy for variation in the local demand for charity care generally perform as predicted. Charity care is higher where a larger share of the

population is uninsured. The unemployment rate is contrary to expectations and counter-intuitive[3]. Higher infant mortality raises charity care provision. Higher physician supply increases charity care, while higher nursing supply reduces it, possibly due to substitution.

Discussion

Our results build on prior analyses of physicians' self-provision of charity care. We find that an economic framework explains variation in physician behavior. Statistical significance, notwithstanding, however, most of the variation in the data are unexplained, suggesting that we either have poor measures of the economic environment or that other personal, professional or circumstantial factors remain key.

Managed care is significantly related to lower levels of charity care for primary care physicians. Both market-level factors and individual contracting tend to reduce capacity for uncompensated care. From a policy perspective, this is troubling since underserved populations have significant unmet needs in primary health care. Growing managed care demands appear to crowd-out the service mission. The effect on specialists is mixed. Demand for specialty care has been damped by managed care and we see potentially a small rise in capacity for treating non-paying patients.

Changes in practice organization also threaten the safety net. Over the past decade the proportion of physicians in solo practice has fallen from 40% to 24%. Similarly there has been a rise in employees as practice sizes increase and diffuse ownership is costly. Larger practices may enjoy efficiency gains in operations, and better ability to bear risk, but there are externalities in terms of physician discretionary support of charitable activities.

[3] The correlation between uninsured and unemployed is modest, rho = .34.

This paper is an initial exploration and clearly more work remains. Obviously work-hours and choice of practice setting are endogenous to wages, incomes and the practice environment. While our results are reasonably robust across alternative specifications we remain concerned about disentangling effects. Also, there seem to be distinctly different propensities to provide charity care across specialties. We need to further examine psychiatry and OB/GYN, as well as examine differences within medical and surgical specialties, or between the various primary care specialties.

Finally, there is considerable uncertainty as to how charity care is defined. We suspect that some of what should be called bad debt expense is counted, ex post, as charity. Also lack of distinction between reduced fee hours and free care limits our ability to fully examine how care responds to economic incentives, and who is receiving care.

Figure 1: Distribution of Charity Care Hours per Month in CTS Physician Sample

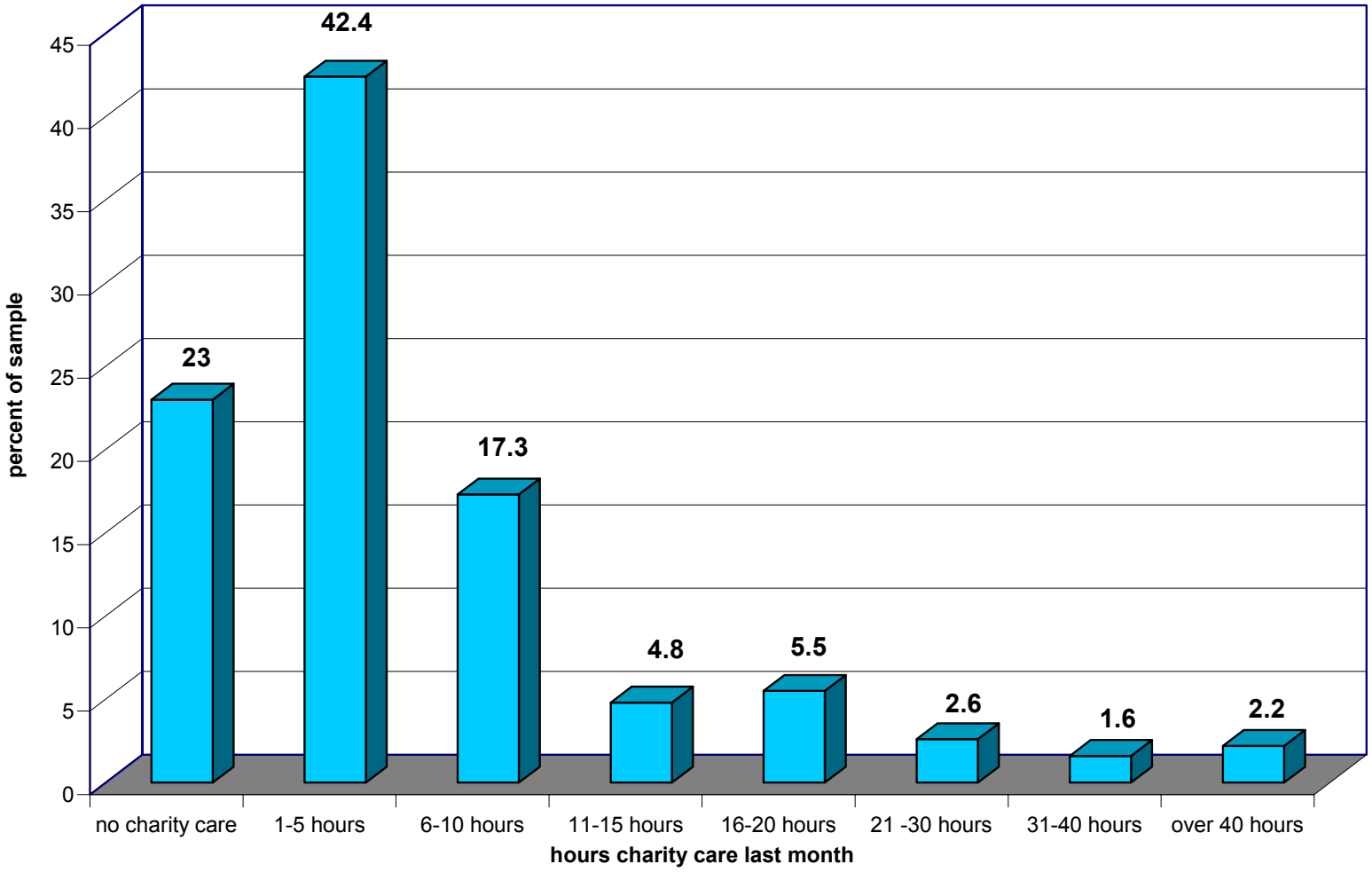

Figure 2: Distribution of Charity Care by Specialty

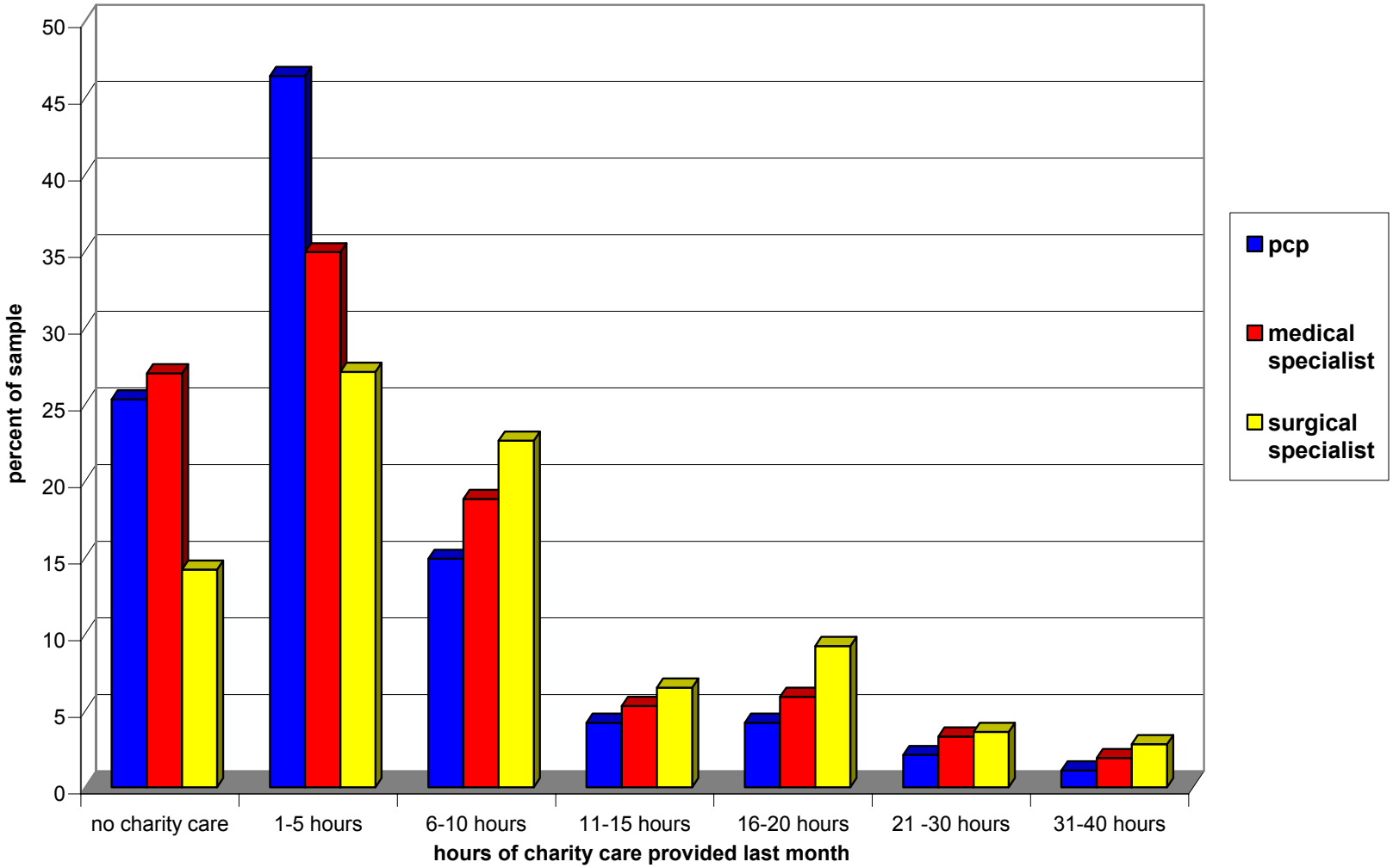

Figure 3: Distribution of Charity Care by Physician's Yearly Income

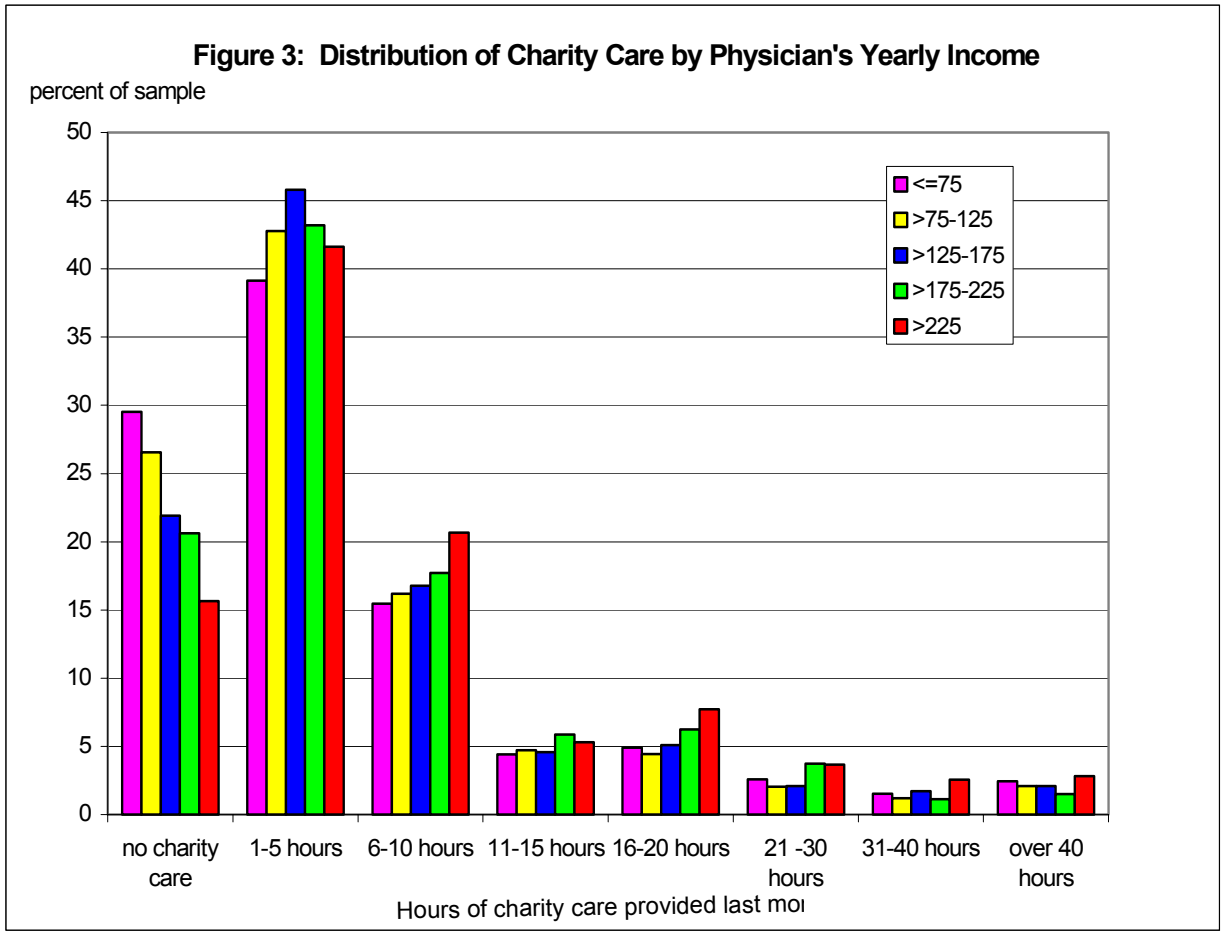

Table 1: Descriptive Statistics Key Variables

	Definition	**Obs**	**Mean**	**SD**	**HypothesizedEffect**[4]
Dependent variable					
hrfree	Hours of free care provided last month	9592	7.46	13.51	N/A
ln(hrfree)	Log of hours of free care	9592	0.19	2.83	N/A
Individual characteristics					
male	Male gender=1	9592	0.81	0.40	+
imgsupr	International medical graduate=1	9592	0.20	0.40	+
board	Board certified or eligible=1	9543	0.95	0.21	+
yrspract	Years of practice	9592	21.44	10.59	+/-
Practice characteristics					
own	Full or part time owners=1	9592	0.60	0.50	+
solo	Solo and 2-physician practice=1	9592	0.40	0.49	+
spec	Medical and surgical specialists=1	9592	0.38	0.48	+/-
no_mdaid	Practice not accepting Medicaid patients=1	9592	0.21	0.41	-
Opportunity cost variables					
wage_hr	Hourly wage	9529	68.95	42.64	-
income_1000	Yearly income in $1000	9592	162.76	79.34	+
specinc_1000	Interaction term: specialists* income	9592	76.43	111.46	-
privcap_w	Capacity to accept privately insured patients[5]	9592	28.18	16.42	-
Managed care variables					
pmc	Percent revenues from all managed care	9592	41.60	25.75	-
specmc	Specialist * practice managed care revenue	9592	13.58	22.67	+
Market level variables					
Marketmc	Average PMSA-level managed care penetration for 1994-1995	8856	32.55	11.34	-
Marketmc*sp	Interaction term; specialist*mtk-level managed care penetration	8856	11.27	8.42	+
uninsr	Uninsured , percentage	9592	0.12	0.05	+
uemp96_rate	Unemployment rate in 1996	9145	4.99	1.76	+
imr9195_1000	Average infant mortality rate for 91-95 per 1000	9145	7.45	1.10	+
md96_1000	Number of physicians per 1000 in 1996	9145	3.03	0.90	+
rn_1000	Number of registered nurses per 1000 people in 1989	8943	8.34	1.45	+

[4] Hypothesized effect
[5] This variable was created as follows: hrsmed-hrsfree-hrsaid-hrscare

Table 2: Charity care by key explanatory variables

Variables	Categories	Mean of the hours of charity care per month
Gender	Male	7.7
	Female	6.4
IMG	Foreign	8.3
	National	7.3
Board	Board certified	7.5
	Non-certified	6.4
Own	Full or part-time owner	7.5
	Employee	7.4
Solo	Solo or 2 phys	7.7
	3 phys and up	7.3
Closed to Medicaid	Do not accept Medicaid	5.4
	Accept Medicaid payments	8.0
Years of practice	<=10	7.3
	11-30	7.7
	>=31	6.8
Income_1000	<=75	7.0
	> 75-125	6.8
	> 125-175	7.4
	> 175-225	7.2
	> 225	9.5
Market level variables		
Unemployment rate in 96	Low (<3.2)	5.3
	Medium (>=3.2-6.75)	7.1
	High (>=6.75)	9.5
Average IMR for 91-95 per 1000	Low (<6.35)	6.9
	Medium (>=6.35-8.5)	7.6
	High (>=8.5)	7.8
Number of MD in 96 per 1000 people	Low (< 2.13)	7.4
	Medium (>=2.13-3.93)	7.3
	High (>=3.93)	8.3
Number of RN in 1989 per 1000 people	Low (<6.89)	8.7
	Medium (>=6.89-9.79)	7.2
	High (>=9.79)	7.2

Table 3: results

Dependent Variable: Ln(hours of charity care per month)

Variable Name	Model 1 Coefficient estimate (t-statistic)	Model 2 Coefficient estimate	Model 3 Coefficient estimate	Model 4 Coefficient estimate (endogenous MC, mdsupply)
constant	-.671 (-3.75)	-.246 (-0.35)	-.243 (0.35)	-0.297 (-1.02)
Male	0.3211 4.83	0.291 (3.32)	0.292 (3.42)	0.273 (3.12)
Board certified	0.1601 (1.04)	0.254 (2.00)	0.336 (2.07)	0.398 (2.34)
Owner	0.9286 (13.21)	0.919 (11.02)	0.903 (11.67)	0.869 (10.93)
Solo/2MDs	0.2670 (3.91)	0.294 (3.01)	0.269 (3.64)	0.259 (3.40)
IMG	0.1661 (2.37)	0.090 (1.07)	0.099 (1.30)	0.104 (1.32)
Yrs in practice	-0.018 (-6.41)	-0.025 (-6.06)	-0.019 (-6.33)	-0.0198 (-6.27)
Specialist	0.4538 (7.53)	0.092 (0.48)	0.107 (0.59)	0.020 (0.11)
No-medicaid	-0.5075 (-7.10)	-0.478 (-6.13)	-0.48 (-6.13)	-0.509 (-6.21)
Practice share of managed care revenues		-0.006 (-3.17)	-0.0052 (-3.02)	-.0031 (-1.94)
Specialist*(practice MC rev)		0.0059 (2.29)	0.0051 (2.13)	.0041 (2.61)
Market-MC pen		-0.0089 (-1.87)	-0.0078 (-1.67)	-0.0091 (-2.19)
Specialist*market MC pen		0.0126 (2.45)	0.0101 (2.01)	0.0189 (2.47)
Hourly wage			**-0.0069** **(-4.34)**	**-0.0063** **(-4.32)**
Hourly wage*spec			**0.0058** **(1.38)**	**0.0041** **(3.17)**
Income ($1000s)			**0.0033** **(3.46)**	**.0032** **(3.03)**
Specialist*Income			**-0.001** **(-1.31)**	**-0.0015** **(-1.50)**
Private patient load			**0.0143** **(-5.11)**	**-0.011** **(-5.66)**
MDs/1000			0.365 (3.58)	.308 (2.43)
RN/1000			-0.152 (-3.06)	-0.115 (-1.87)
Uninsured			0.201 (2.96)	0.293 (3.10)
Infant mortality rate			0.0387 (1.59)	0.029 (2.68)
Unemployed			-0.129 (-2.09)	-0.89 (-2.72)
Adj. R squared	0.057	0.064	0.072	0.069

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